

## **REMARKS**

The Examiner is thanked for the thorough examination of the present application. The Non-Final Office Action mailed July 3, 2008 continued to reject all examined claims. Applicant respectfully requests reconsideration and withdrawal of the rejections for at least the following reasons.

### **IDS Reference**

The Office Action indicated that the NPL reference, which the previous attorney listed in an SB08A form was not provided to the PTO, and needed to be for completeness. The undersigned, who has now taken over the prosecution of this application, attaches to this response a copy of the article "Effects of Tuner IQ Imbalance on Multicarrier-Modulation Systems," so that the Examiner can fully consider this article.

### **Discussion of Rejections**

The Office Action rejected all claims 1-22 under 35 U.S.C. § 102(b) as allegedly being anticipated by Kaneko (JP 09-153882). Applicant has amended each of the independent claims to more clearly define over this cited reference.

In this regard, the claimed embodiments define a system and method for estimating I/Q imbalance of a receiver by transmitting both the I and Q signals through only a single modulation path and receiving with the original "two" modulation

paths. This is not taught by the cited reference. In this regard, the paragraph (of the present application), beginning on page 12, line 21 states:

It should be noted that the relation between the  $a_{k,i}$ ,  $a_{k,i}$ ,  $a_{k,q}$  and  $a_{k,q}$  is not necessarily limited to that described previously. The receiver I/Q imbalance may be estimated ***only by transmitting the signal through the same modulation path*** and the transmitter I/Q imbalance may be estimated only by receiving the signal through the same demodulation path. However, this increases difficulty in baseband signal processing.

This aspect is more clearly embodied in the amended claims. For example, claim 1 is amended to recite:

1. A method for estimating a I/Q imbalance parameter of a receiver, comprising the steps of:

***transmitting a first signal modulated by a first and a second modulated carrier through only a single modulation path at a transmitter;***

receiving the first signal demodulated by a first demodulated carrier and a second demodulated carrier, respectively through first and second demodulation paths at a receiver;

***transmitting a second signal modulated by the first and the second modulated carrier through the single modulation path at the transmitter;***

receiving the second signal demodulated by the first and the second demodulated carrier respectively through the first and second demodulation paths at the receiver; and

deriving the I/Q imbalance parameter of the receiver according to the first signal and the second signal transmitted by the transmitter and the demodulated first and second signals received by the receiver, wherein the first and second signals are symmetrical in the frequency domain.

(*Emphasis added*). Claim 1 patently defines over the cited art for at least the reasons

that the cited art fails to disclose the features emphasized above.

The Office Action cited multipliers 43 and 44 and the adder 45 of JP 09-153882 as being the modulation path. Applicant respectfully disagrees with this application of JP 09-153882. In this regard, multipliers 43 and 44 are clearly on two distinct paths, such that the signal passing through multiplier 43 could not pass through multiplier 44, and vice versa. That is, as can be seen from Drawing 5 of JP 09-153882, the I signal CANNOT pass through multiplier 44, nor can the Q signal pass through multiplier 43. As such, as amended herein, claim 1 clearly defines over JP 09-153882.

Independent claims 8, 12, and 16 have been amended to similarly define over JP 09-153882. Accordingly, the rejections of these independent claims should be withdrawn. Insofar as all remaining claims depend from either claim 1, 8, 12 or 16, all rejections should be withdrawn. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

### **Conclusion**

In view of the foregoing, Applicant respectfully requests the Examiner's reconsideration of the application and the timely allowance of all pending claims. Applicant has made every effort to place the present application in condition for allowance. It is therefore earnestly requested that the present application, as a whole, receive favorable consideration and that all of the claims be allowed in their present form.

Should the Examiner feel that further discussion of the application and the Amendment is conducive to prosecution and allowance thereof, please do not hesitate to contact the undersigned at the address and telephone listed below.

A credit card authorization is provided to cover the fee associated with the accompanying one month extension of time. No additional fee is believed to be due in connection with this submission. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to deposit account 20-0778.

Respectfully submitted,

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